

REMARKS

Applicant gratefully acknowledges that the examiner has indicated that claim 28 contains allowable subject matter. A new independent claim 37 containing the limitations of claim 28 has been added. Since claim 28 contains allowable subject matter, applicant believes that the new claim 37 is patentable. It follows that the dependent claims 38-45 also are patentable.

Claims 20 and 21 stand rejected over the disclosure of Funk. Claim 20 has been amended to include the feature of claim 21 and to recite, in addition, that "the control means is operable from a remote location to apply said force substantially without creating additional lateral force applied to the shaft". Basis for this amendment is found throughout the description and drawings and in particular, at page 10, lines 25 to 33.

Embodiments of the subject matter disclosed in this application create a clutch arrangement by mounting a motor on a slider plate. Movement of the slider plate creates tension in a drive belt, or releases the tension, so that a drive wheel driven by the motor is releasably engaged, through the belt, with a driven wheel fixed for rotation with the shaft. In one embodiment (Figs. 1 to 5), a Bowden cable 50 is used to apply forces within the drive arrangement, between pillars 52A, 52B, by manipulation at a remote location. In a second embodiment, a Bowden cable is again used to create forces within the module to engage and disengage the clutch and also, simultaneously, to engage and disengage the chain wheel 82, to allow for manual rotation of the shaft 12A. In other examples, mentioned at page 10, line 30, other arrangements could be used for creating force between the pillars, such as an actuator controlled from a remote location.

The lack of lateral force on the shaft is created by using control means to apply a force between the first carriage structure and the base structure, i.e. within the module. Thus, for example, by creating a force between the pillars 52A, 52B of the example of Fig. 1, no net force is applied to the module by manipulation of the Bowden cable 50 at the remote location and therefore, no additional lateral force is applied to the shaft 12. Nevertheless, the module 10 remains capable of being controlled from the remote location.

This is convenient for a typical installation for a garage door, for example, in which the shaft 12 may be above the door and out of reach, but the remote location can be convenient for the user. This allows the clutch 18 to be manually disengaged in a convenient manner and thereby allows the door to be opened manually. This is useful for safety reasons and in the event of a power cut.

Funk discloses that the engine 46 and its mounting base 48 can be shifted to the left, as viewed in Fig. II, to tighten the belt 40 (column 2, lines 44 to 47). This is achieved by manipulating the lever 70, 92 to pull on the mounting base 48, through the pin 60. In effect, the pulley 40 is pulled away from the pulley 38 in order to tighten the belt 40, or the pulley 42 is released to move slightly toward the pulley 38 and slacken the belt 40. Consequently, when the belt 40 is tightened, there is a lateral force applied to the shaft 36 through the clutch arrangement, and in particular, by means of the tension in the belt 40. Normal operating conditions would have the clutch engaged, so that the engine 46 can drive the shaft 36. This means that the shaft 36 experiences this lateral force on a continuous basis, in normal use. Over a period of time, this continuous lateral force may be expected to create wear, for example in the bearings of the shaft 36.

Funk therefore does not disclose that "said force [is applied] substantially without creating additional lateral force applied to the shaft". Accordingly, amended claim 20 is novel over Funk.

Funk suffers the technical problem of a constantly applied lateral force, during normal use, with expected results of wear in bearings etc. There is no recognition in Funk that lateral forces exist on the shaft 36, nor that they are significant in any way. Neither is there any suggestion in Funk of any mechanism which could be used to achieve a clutch action without creating additional lateral force applied to the shaft or of the advantages which would accrue from this.

The same comments apply again in relation to Bent, modified only in the following respect. In Bent, drive to the shaft 29 is conveyed by pulling the idler pulley 87 away from

the shaft 29 so that the belt 85 is tightened and therefore conveys drive from the sheave 35 to the sheave 51 (both sheaves 35, 51 being centered on the shaft 29). The idler pulley 87 is pulled away from the shaft 29 by means of the cable 105 which pivots a member between positions shown in full lines and in dotted lines in Fig. 3.

Bent is a clear example of an arrangement which requires that a continuous lateral force is exerted within the arrangement, during normal use, when drive is being conveyed.

Beaver contains no further teaching in relation to lateral forces, their disadvantages, or how to overcome them.

In view of the foregoing, applicant submits that the subject matter of claim 20 is not disclosed or suggested by the cited references, whether taken singly or in combination. Therefore, claim 20 is patentable and it follows that the dependent claims 22-36 also are patentable.

Respectfully submitted,

/John Smith-Hill/

John Smith-Hill
Reg. No. 27,730

Chernoff, Vilhauer, McClung & Stenzel, LLP
601 SW Second Ave. Ste. 1600
Portland, OR 97204

Tel. (503) 278-3334
Fax (503) 228-4373

Docket: SWIN.3530